IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
TYLER DIVISION

ADAPTIX, INC.,	§	
Plaintiff,	§	
	§	
v.	§	No. 6:12CV17
	§	
AT&T MOBILITY LLC, et al.,	§	
Defendants.	§	
_____	§	
	§	
ADAPTIX, INC.,	§	
Plaintiff,	§	
	§	
v.	§	No. 6:12CV20
	§	
PANTECH WIRELESS, INC., et al.,	§	
Defendants.	§	
_____	§	
	§	
ADAPTIX, INC.,	§	
Plaintiff,	§	
	§	
v.	§	No. 6:12CV120
	§	
CELLCO PARTNERSHIP d/b/a	§	
VERIZON WIRELESS, et al.,	§	
Defendants.	§	

MEMORANDUM OPINION AND ORDER

The above-referenced cases were referred to the undersigned United States Magistrate Judge for pre-trial purposes in accordance with 28 U.S.C. § 636. Before the Court are Plaintiff's Opening Claim Construction Brief (Dkt. No. 168), Defendants' Response (Dkt. No. 170), and Plaintiff's Reply (Dkt. No. 175).[1] Also before the Court are the parties' Local Patent Rule ("P.R.") 4-3 Joint Claim Construction and Prehearing Statement (Dkt. No. 121) and the parties' P.R. 4-5(d) Joint Claim Construction Chart (Dkt. No. 177).

[1] This briefing supersedes prior briefing filed by the parties. *See* Dkt. Nos. 135, 149 & 153.

A claim construction hearing, in accordance with *Markman v. Westview Instruments*, 52 F.3d 967 (Fed. Cir. 1995) (en banc), *aff'd*, 517 U.S. 370 (1996), was held in Tyler on March 5, 2014. After hearing the arguments of counsel and reviewing the relevant pleadings, presentation materials, other papers, and case law, the Court finds the disputed terms of the patents-in-suit should be construed as set forth herein.

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I. BACKGROUND

Plaintiff brings suit alleging infringement of United States Patents No. 6,947,748 ("'748 patent") and 7,454,212 ("'212 patent") (collectively, the "patents-in-suit"). Both patents-in-suit are titled "OFDMA with Adaptive Subcarrier-Cluster Configuration and Selective Loading." The '748 patent issued on September 20, 2005, and bears a filing date of December 15, 2000. The '212 patent issued on November 18, 2008, bears a filing date of August 8, 2005, and is a continuation of the '748 patent. Because the patents-in-suit share a common written description and figures, citations to the patents-in-suit shall be to the '748 patent only.

In general, the patents-in-suit relate to wireless communications, such as for cellular telephones. In particular, the patents-in-suit relate to orthogonal frequency division multiple access ("OFDMA"), in which the communication frequency bandwidth is divided into smaller "subcarriers." *See* '748 patent, 1:15-18. These subcarriers are at closely-spaced frequencies but are "orthogonal," meaning that they do not interfere with one another. *See id.* The patents-in-suit disclose systems and methods for allocating subcarriers among multiple "subscribers," such as mobile cellular telephone units. The Abstracts of the patents-in-suit state:

> A method and apparatus for subcarrier selection for systems is described. In one embodiment, the system employs orthogonal frequency division multiple access (OFDMA). In one embodiment, a method for subcarrier selection comprises each of multiple subscribers measuring channel and interference information for subcarriers based on pilot symbols received from a base station, at least one of subscribers selecting a set of candidate subcarriers, providing feedback information on the set of candidate subcarriers to the base station, and the one subscriber receiving an indication of subcarriers of the set of subcarriers selected by the base station for use by the one subscriber.

Plaintiff asserts claims 6-9, 11, and 19-22 of the '748 patent and claims 1-4, 8-13, 15, 16, 18-21, and 23-30 of the '212 patent[2] against Defendants' so-called "LTE" (Long-Term Evolution) wireless technologies. Dkt. No. 168 at 1. Defendants respond that the patents-in-suit have more in common with WiMAX [(Worldwide Interoperability for Microwave Access)] than with LTE because "[Plaintiff] and the named inventors were focused on WiMAX" and because "[s]ome of the named inventors of the '748 and '212 patents participated in the development and standardization of WiMAX." Dkt. No. 170 at 2. Plaintiff replies that "the claims at issue in this case are not and cannot be based on the type of infrastructure that distinguishes WiMAX from LTE, both of which are standards that evolved well after the filing that led to the Patents-in-Suit." Dkt. No. 175 at 3.

Judge Paul Grewal of the Northern District of California construed various terms in the '748 patent and the '212 patent on December 19, 2013. *Adaptix, Inc. v. Motorola Mobility LLC, et al.*, No. 5:13-cv-1774, Dkt. No. 123 (N.D. Cal. Dec. 19, 2013) (attached to Plaintiff's opening brief in the above-captioned cases as Exhibit C). Judge Grewal's claim construction order contains no analysis but states that "a complete opinion will issue before entry of any judgment." *Id.* at 4. Although the constructions by Judge Grewal are considered by this Court and are noted below, the absence of any analysis limits the degree to which this Court can give deference to that claim construction order.

II. LEGAL PRINCIPLES

The claims of a patent define the invention to which the patentee is entitled the right to exclude. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (en banc). Claim terms

[2] Defendants submit: "[Plaintiff] includes Claims 2 and 20 of the '212 patent in its Opening Brief. However, the Court has not granted, and [Plaintiff] has not sought, leave to assert Claims 2 and 20 of the '212 patent." Dkt. No. 170 at 6 n.6.

are given their ordinary and customary meaning to one of ordinary skill in the art at the time of the invention, unless there is clear evidence in the patent's specification or prosecution history that the patentee intended a different meaning. *Phillips*, 415 F.3d at 1312-13. Claim construction is informed by the intrinsic evidence: the patents' specification and file histories. *Id.* at 1315-17. Courts may also consider evidence such as dictionary definitions and treatises to aid in determining the ordinary and customary meaning of claim terms. *Phillips*, 415 F.3d at 1322. Further, "[o]ther claims, asserted and unasserted, can provide additional instruction because 'terms are normally used consistently throughout the patent.'" *SmartPhone Techs. LLC v. Research in Motion Corp.*, No. 6:10-CV-74-LED-JDL, 2012 WL 489112, at *2 (E.D. Tex. Feb. 13, 2012) (citing *Phillips*, 415 F.3d at 1314). "Differences among claims, such as additional limitations in dependent claims, can provide further guidance." *Id.*

A court should "avoid the danger of reading limitations from the specification into the claim[s]." *Phillips*, 415 F.3d at 1323. For example, "although the specification often describes very specific embodiments of the invention, [the Federal Circuit has] repeatedly warned against confining the claims to those embodiments." *Id.* The Federal Circuit has "expressly rejected the contention that if a patent describes only a single embodiment, the claims of the patent must be construed as being limited to that embodiment." *Id.* This is not only because of the requirements of Section 112 of the Patent Act, but also because "persons of ordinary skill in the art rarely would confine their definitions of terms to the exact representations depicted in the embodiments." *Id.* Limitations from the specification should only be read into the claims if the patentee "acted as his own lexicographer and imbued the claim terms with a particular meaning or disavowed or disclaimed scope of coverage, by using words or expressions of manifest exclusion or restriction." *E-Pass Techs., Inc. v. 3Com Corp.*, 343 F.3d 1364, 1369 (Fed. Cir.

2003) (citations omitted); *Thorner v. Sony Computer Entm't Am. LLC*, 669 F.3d 1362, 1367 (Fed. Cir. 2012).

Similarly, the prosecution history may not be used to infer the intentional narrowing of a claim absent the applicant's clear disavowal of claim coverage. *Superguide Corp. v. DirecTV Enters.*, 358 F.3d 870, 875 (Fed. Cir. 2004) (citations omitted). "To be given effect, such a disclaimer must be made with reasonable clarity and deliberateness." *Id.*

Guided by these principles of claim construction, this Court directs its attention to the patents-in-suit and the disputed claim terms.

III. CONSTRUCTION OF AGREED TERMS

The Court hereby adopts the following agreed-upon constructions:

Term	Patent / Claims	Agreed Construction
"SINR"	'748 patent, claims 6 and 19	"Signal-to-Interference-plus-Noise Ratio"
"pilot symbols"	'748 patent, claims 6 and 19; '212 patent, claims 1, 18, and 19	"symbols, sequences, or signals known to both base station and subscriber"
"clusters of subcarriers"	'748 patent, claims 6, 11, 19, and 21; '212 patent, claim 18	"at least two logical units of subcarriers"
"selecting"	'748 patent, claims 6, 8, 19, and 21; '212 patent, claims 1 and 18	"choosing"
"intra-cell traffic load balancing"	'748 patent, claim 11	"balancing cluster usage within a cell of a base station"

Dkt. No. 121, Ex. A at 1; Dkt. No. 170 at 6; Dkt. No. 177, Ex. A at 4, 6, 10, 14 & 18. The parties have also reached agreement that the previously-disputed terms "SINR Index", "inter-cell interference avoidance" and "indicating clusters of subcarriers desired for use" do not need to be construed. Dkt. No. 168 at 1 n.1; Dkt. No. 170 at 6.

IV. CONSTRUCTION OF DISPUTED TERMS

A. "select[ing] a set of candidate subcarriers"

Plaintiff's Proposed Construction	Defendants' Proposed Construction
"selecting": "choosing" "otherwise, plain and ordinary meaning; no construction necessary"	"choos[ing] a set of subcarriers desired by the subscriber for use"

Dkt. No. 121, Ex. A at 2; Dkt. No. 168 at 6. This disputed term appears in claims 6, 8, 19, and 21 of the '748 patent and claims 1 and 18 of the '212 patent.

Judge Grewal found that "selecting" means "choosing" and that all other terms have their plain and ordinary meaning. Dkt. No. 168, Ex. C at 2.

(1) The Parties' Positions

Plaintiff argues that Defendants' proposal re-defines "candidate subcarriers" so as to include language that "is explicitly claimed elsewhere and originates from a highly specific way of implementing one function from a disclosed embodiment." Dkt. No. 168 at 6-7. Plaintiff also argues that contrary to Defendants' proposed construction, the specification discloses selecting clusters with the best relative performance. *Id.* at 8. Plaintiff urges that "[t]he specification . . . clearly teaches selection based on relative performance decoupled from the notion of 'desire.'" *Id.* (citing '748 patent, 5:41-44). Finally, Plaintiff notes that Claim 19 of the '748 Patent recites "clusters of subcarriers *desired* for use." *See id.* at 7-8 (emphasis added).

Defendants respond:

> If the remainder of this phrase is left unconstrued, [Plaintiff] will argue that infringement occurs under the "plain and ordinary meaning" when a handset provides feedback on any set of subcarriers—even if some of those subcarriers are unusable and no actual selection of "candidate subcarriers" has been made by the subscriber. In other words, [Plaintiff] will argue that "candidate" has no meaning.

> * * *
>
> Defendants' construction preserves the difference between the subcarriers . . . which are selected as "candidate[s]" because the subscriber *desires to use* them, and those . . . which are selected by the base station *for actual use* by the subscriber.

Dkt. No. 170 at 7 & 8. Defendants also argue that Plaintiff's implicit suggestion that a subscriber can infringe by selecting subcarriers that it does *not* desire to use "is at odds with a fundamental purpose of the '748 and '212 patents, *i.e.*, to reduce the feedback reporting overhead." *Id.* at 9 (citing '748 patent, 1:64-2:5 & 2:59-3:6). Defendants further note that their proposed construction "does not . . . exclude the selection of all subcarriers." *Id.* at 11. Finally, as to Plaintiff's comments regarding Claim 19, Defendants respond that the terms "candidate" and "desired for use" are used interchangeably in the claims. *Id.* at 13-14.

Plaintiff replies by reiterating its opening arguments and by citing Judge Grewal's rejection of the same proposed construction that Defendants here propose. Dkt. No. 175 at 4-5; *see* Dkt. No. 168, Ex. C at 2; *see Adaptix, Inc. v. Motorola Mobility LLC, et al.*, No. 5:13-cv-1774, Dkt. No. 114 at 6 (Defendants' Responsive Claim Construction Brief in Judge Grewal's cases proposing the same construction that Defendants here propose).

At the March 5, 2014 hearing, Plaintiff further argued that it is not proposing reading the word "candidate" out of the claims because "candidate" subcarriers are the subcarriers for which feedback is provided.

(2) Analysis

Although Plaintiff has proposed that no construction is required, the parties have presented a "fundamental dispute regarding the scope of a claim term," and the Court has a duty to resolve that dispute. *O2 Micro Int'l Ltd. v. Beyond Innovation Tech. Co.*, 521 F.3d 1351, 1362-63 (Fed. Cir. 2008).

Claims 6 and 19 of the '748 patent are representative and recite (emphasis added):

> 6. A method for subcarrier selection for a system employing orthogonal frequency division multiple access (OFDMA) comprising:
>
> a subscriber measuring channel and interference information for a plurality of subcarriers based on pilot symbols received from a base station;
>
> the subscriber *selecting a set of candidate subcarriers*;
>
> the subscriber providing feedback information on the set of candidate subcarriers to the base station, wherein providing feedback information comprises arbitrarily ordering the set of candidate of [*sic*] subcarriers as clusters of subcarriers, and further wherein the feedback information includes an index indication of a candidate cluster with its SINR value; and
>
> the subscriber receiving an indication of subcarriers of the set of subcarriers selected by the base station for use by the subscriber.
>
> * * *
>
> 19. An apparatus comprising:
>
> a plurality of subscribers in a first cell to generate feedback information indicating *clusters of subcarriers desired for use by the plurality of subscribers*; and
>
> a first base station in the first cell, the first base station to allocate OFDMA subcarriers in clusters to the plurality of subscribers;
>
> each of a plurality of subscribers to measure channel and interference information for the plurality of subcarriers based on pilot symbols received from the first base station and at least one of the plurality of subscribers to *select a set of candidate subcarriers* from the plurality of subcarriers, and the one subscriber to provide feedback information on the set of candidate subcarriers to the base station and to receive an indication of subcarriers from the set of subcarriers selected by the first base station for use by the one subscriber, wherein the plurality of subscribers provide feedback information that comprises an arbitrarily ordered set of candidate subcarriers as clusters of subcarriers, and further wherein the feedback information includes an index indication of a candidate cluster with it [*sic*] SINR value.

The specification consistently explains that each subscriber desires to identify and utilize the subcarriers that provide the best performance for that particular subscriber:

> For downlink channels, each subscriber first measures the channel and interference information for all the subcarriers and then *selects multiple subcarriers with good performance* (e.g., a high signal-to-interference plus noise ratio (SINR)) and feeds back the information on these candidate subcarriers to the base station.

'748 patent, 3:7-12 (emphasis added); *see id.* at 5:41-44 (similar) & 5:48-50 ("Each subscriber selects the *clusters with relatively better performance* than others.") (emphasis added); *see also id.* at 8:34-36 ("The goal of the subscriber is to provide an indication to the base station as to those *clusters that the subscriber desires to use*.") (emphasis added); *id.* at 9:27-37 ("The interference information . . . [is] used by the subscriber to select *desirable* clusters. . . . Based on this information, the subscriber selects clusters that it *desires to use based on predetermined performance criteria*.") (emphasis added); *id.* at 5:50-52 ("The selection results in each subscriber selecting clusters they would *prefer* to use based on the measured parameters.") (emphasis added); *id.* at 3:34-36 ("Such coding/modulation rates may be specified by the subscriber when specifying subcarriers that it finds *favorable* to use.") (emphasis added).

Defendants' proposal of the word "desired," however, would tend to render the claims subjective. *Cf. Datamize, LLC v. Plumtree Software, Inc.*, 417 F.3d 1342, 1348-1356 (Fed. Cir. 2005) (finding indefinite a claim reciting that the look and feel of an interface screen is "aesthetically pleasing"). When one potential interpretation would render a claim indefinite, applying a "narrowing construction" may be appropriate "when doing so would still serve the notice function of the claims." *Halliburton Energy Servs., Inc. v. M-I LLC*, 514 F.3d 1244, 1253 (Fed. Cir. 2008); *see Exxon Research & Eng'g Co. v. United States*, 265 F.3d 1371, 1375 (Fed. Cir. 2001) ("If a claim is insolubly ambiguous, *and no narrowing construction can properly be adopted*, we have held the claim indefinite.") (emphasis added).

Subjectiveness or indefiniteness can be readily avoided by focusing on subscriber actions rather than subscriber "desires." By selecting a set of subcarriers or clusters, the subscriber is *requesting* use of those subcarriers or clusters, as disclosed in the specification. *See* '748 patent, 9:37-40 ("Using the ordered list of clusters, the subscriber *requests the desired clusters* along

with coding and modulation rates known to the subscriber to achieve desired data rates.") (emphasis added); *see also id.* at 9:61-64 & Fig 4; *id.* at 6:42-54 ("For example, the base station first ensures the assignment of the basic clusters to the subscribers and then tries to satisfy further *requests* on the auxiliary clusters from the subscribers. . . . In one embodiment, the base station allocates basic clusters to a new subscriber and then determines if there are any other subscribers *requesting* clusters. If not, then the base station allocates the auxiliary clusters to that new subscriber."). Referring to subscriber action is consistent with the context of the relevant claims, which all refer to other subscriber actions such as measuring channel information and providing feedback information.

This approach also addresses the type of concerns expressed in the authorities cited by Plaintiff, in particular as to the recital of clusters "desired for use" in claim 19 of the '748 patent (quoted above). *See Arlington Indus., Inc. v. Bridgeport Fittings, Inc.*, 632 F.3d 1246, 1254 (Fed. Cir. 2011) (declining to require that the spring metal adaptor in one independent claim must be "split" or "less than a complete circle" because that language appears in other independent claims); *see also DSW, Inc. v. Shoe Pavilion, Inc.*, 537 F.3d 1342, 1347 (Fed. Cir. 2008) (finding "[t]he district court erroneously imported the Track and Roller Limitation directly recited in claims 1-3 into the generally phrased 'vertically disposed, horizontally movably positionable stack divider' language of claims 4-6"); *Helmsderfer v. Bobrick Washroom Equip., Inc.*, 527 F.3d 1379, 1382 (Fed. Cir. 2008) (noting that "different claim terms are presumed to have different meanings" and "declin[ing] to construe the term 'partially hidden from view' to have the same meaning as 'generally hidden from view' or 'at least partially hidden from view.'").

Finally, Defendants' extrinsic dictionary definitions for "select" are not inconsistent with the Court's interpretation of the disputed term. Dkt. No. 170, Ex. 6, *Oxford English Dictionary* 901 (2d ed. 1998) ("to choose or pick out in preference to another or others"); *id.*, Ex. 7, *Authoritative Dictionary of IEEE Standard Terms* 1017 (7th ed. 2000) ("To identify, within a set of items, all items that meet a particular criterion"); *see also id.*, Exs. 8-11 (similar).

In sum, the constituent term "candidate" can be given meaning, in the context of the claims and the specification as quoted above, by construing the disputed term to refer to what is being requested by the subscriber.

The Court therefore hereby construes **"select[ing] a set of candidate subcarriers"** to mean **"choos[ing] a set of subcarriers that the subscriber requests for use."**

B. "subcarriers [of/from] the set of subcarriers selected by the [first] base station"

Plaintiff's Proposed Construction	**Defendants' Proposed Construction**
"plain and ordinary meaning; no construction necessary"	"subcarriers that the base station has chosen from the set of candidate subcarriers selected by the subscriber"

Dkt. No. 121, Ex. A at 4; Dkt. No. 168 at 9. This disputed term appears in claims 6, 8, 19, and 21 of the '748 patent and claims 1, 3, and 18 of the '212 patent.

Judge Grewal construed this disputed term to mean "subcarriers that the base station has chosen from the set of candidate subcarriers selected by the subscriber." Dkt. No. 168, Ex. C at 2-3.

(1) The Parties' Positions

Plaintiff argues that "Defendants have proposed a construction that limits the scope of the claim to the preferred embodiments of the patents-in-suit." Dkt. No. 168 at 9. Plaintiff also argues that "[i]f the claim drafter intended the term 'of the set of subcarriers selected by the base

station' to mean that the set of subcarriers are the candidate subcarriers rather than those of the set of subcarriers selected by the base station, the claim drafter could have done something to distinguish the term." *Id.* at 10. Plaintiff explains that "[t]he term 'candidate' means in this context that they are the ones selected by the subscriber as opposed to by the base station for use by the subscriber," and "[t]he set is of those subcarriers selected by the base station for use by the subscriber." *Id.* Plaintiff urges that "because the intrinsic evidence does not require importation of [Defendants' proposed] limitation into the claims, the Court should not do so." *Id.* at 9.

Defendants respond that "[t]he definite article 'the' within 'of *the* set of subcarriers' refers to an antecedent set of 'subcarriers.'" Dkt. No. 170 at 15. Defendants further respond that they are not importing a limitation from the specification, as Plaintiff has argued, because Defendants' proposal is "based on the express claim language and is consistent with *all* the embodiments." *Id.* at 16. Defendants further argue:

> [Plaintiff's] argument that the claim language "of the set of subcarriers" refers to a different set of subcarriers—one that does not have any antecedent basis in the claim—is also misplaced. [Plaintiff's] argument is inconsistent not only with well-established principles of claim construction, but also with the patent specification, which . . . consistently teaches that the base station selects subcarriers from the set of candidate subcarriers previously chosen by the subscriber.

Id. (footnote omitted).

Plaintiff replies by reiterating its opening arguments and by urging that "[t]he set is of those subcarriers selected by the base station for use by the subscriber." Dkt. No. 175 at 5-6.

(2) Analysis

Although Plaintiff has proposed that no construction is required, the parties have presented a "fundamental dispute regarding the scope of a claim term," and the Court has a duty to resolve that dispute. *O2 Micro*, 521 F.3d at 1362-63.

Claim 6 of the '748 patent is representative and recites (emphasis added):

> 6. A method for subcarrier selection for a system employing orthogonal frequency division multiple access (OFDMA) comprising:
> a subscriber measuring channel and interference information for a plurality of subcarriers based on pilot symbols received from a base station;
> *the subscriber selecting a set of candidate subcarriers*;
> the subscriber providing feedback information on the set of candidate subcarriers to the base station, wherein providing feedback information comprises arbitrarily ordering the set of candidate of [*sic*] subcarriers as clusters of subcarriers, and further wherein the feedback information includes an index indication of a candidate cluster with its SINR value; and
> the subscriber receiving an indication of *subcarriers of the set of subcarriers selected by the base station* for use by the subscriber.

The specification discloses that "[u]pon receiving the information from the subscriber, *the base station further selects the subcarriers among the candidates*, utilizing additional information available at the base station . . . ." '748 patent, 3:20-27 (emphasis added); *see id.* at 6:9-11 (similar as to "clusters"); *see also id.* at 7:56-58 ("[Depending on the feedback bandwidth], the subscriber always tries to send the information about as many clusters as possible from which the base station chooses.")

Although Plaintiff has cited authority holding that "a particular embodiment appearing in the written description may not be read into a claim when the claim language is broader than the embodiment," *Superguide*, 358 F.3d at 875, use of the definite article "the" generally refers to something recited previously in the claim. *See NTP, Inc. v. Research In Motion, Ltd.*, 418 F.3d 1282, 1306 (Fed. Cir. 2005) ("[I]t is a rule of law well established that the definite article 'the' particularizes the subject which it precedes. It is a word of limitation as opposed to the indefinite

or generalizing force of 'a' or 'an.'") (citation and internal quotation marks omitted); *see also PODS, Inc. v. Porta Stor, Inc.*, 484 F.3d 1359, 1366 (Fed. Cir. 2007) ("[T]he same terms appearing in different portions of the claims should be given the same meaning."); *cf. Process Control Corp. v. HydReclaim Corp.*, 190 F.3d 1350, 1356 (Fed. Cir. 1999) (noting "the identical language associated with the term 'discharge rate' in both clauses [b] and [d], namely 'from the common hopper to the material processing machine,'" and concluding that "the presence of that identical language clearly indicates that 'a discharge rate' in clause [b] is the same as 'the discharge rate' in clause [d]."") (square brackets in original).

Further, the antecedent basis can be implicit rather than explicit. *Energizer Holdings Inc. v. Int'l Trade Comm'n*, 435 F.3d 1366, 1371 (Fed. Cir. 2006) (holding that "an anode gel comprised of zinc as the active anode component" provided implicit antecedent basis for "said zinc anode"); *see Ex Parte Porter*, 25 U.S.P.Q. 2d 1144, 1145 (B.P.A.I. 1992) ("The term 'the controlled fluid' . . . finds reasonable antecedent basis in the previously recited 'controlled stream of fluid . . . .'").

On balance, a person of ordinary skill in the art would find the general principles of antecedent basis applicable and would conclude that the phrase "the set of subcarriers" in the disputed term refers to "a set of candidate subcarriers," which the claims recite as being selected by the subscriber.

The Court therefore hereby construes **"subcarriers [of/from] the set of subcarriers selected by the [first] base station"** to mean **"subcarriers that the base station has chosen from the set of candidate subcarriers selected by the subscriber."**

C. "index indication of a candidate cluster with it[s] SINR value"

Plaintiff's Proposed Construction	**Defendants' Proposed Construction**
"no construction necessary; plain and ordinary meaning"	"identifier (ID) of a chosen candidate cluster of subcarriers accompanied by its SINR value"

Dkt. No. 121, Ex. A at 4; Dkt. No. 168 at 11. This disputed term appears in claims 6 and 19 of the '748 patent.

Judge Grewal construed this disputed term to mean "identifier (ID) of a chosen candidate cluster of subcarriers with its SINR value." Dkt. No. 168, Ex. C at 3.

(1) The Parties' Positions

Plaintiff argues that Defendants' proposal of an "identifier (ID) . . . accompanied by its SINR value" improperly imports a limitation from a preferred embodiment and should be rejected. Dkt. No. 168 at 11. Plaintiff also argues, as to Defendants' proposal of "chosen," that "it is clear that the 'choosing' in the claims involves the earlier selection of candidate subcarriers, not the later feedback on candidate clusters." *Id.* at 12.

Defendants respond that the disputed term should be construed because "[Plaintiff] has not identified any well-established meaning for it in the art, and by itself, the phrase is ambiguous." Dkt. No. 170 at 19. Defendants argue that "'index indication' and 'SINR value' are two separate pieces of information" because in two of the three feedback embodiments disclosed in the specification, the base station does not know the order of SINR values contained in the feedback information, such as where the SINR values are sent in order of their relative performance. *Id.* at 20-21. Defendants further argue that their proposal does not limit the claims to a single disclosed embodiment because "Defendants' construction would cover a format where each SINR value precedes its Cluster ID, where all SINR values precede their respective

Cluster IDs, or where all Cluster IDs precede their respective SINR values." *Id.* at 21. Finally, Defendants argue that based on the language of the claims themselves, "when the disputed phrase recites 'a candidate cluster' it is referring to those subcarriers previously 'select[ed]' by the subscriber, and the parties have stipulated that 'selected' means 'chosen.'" *Id.* at 22.

Plaintiff replies that Defendants are improperly relying on Figure 5, which Plaintiff notes is described as illustrating "one embodiment" and "[a]n exemplary format for arbitrary cluster feedback." Dkt. No. 175 at 6 (quoting '748 patent, 10:49-52). Plaintiff also submits that "neither selected nor chosen is used in this part of the claim." *Id.* at 6.

(2) Analysis

Although Plaintiff has proposed that no construction is required, the parties have presented a "fundamental dispute regarding the scope of a claim term," and the Court has a duty to resolve that dispute. *O2 Micro*, 521 F.3d at 1362-63.

Claim 6 of the '748 patent is representative and recites (emphasis added):

> 6. A method for subcarrier selection for a system employing orthogonal frequency division multiple access (OFDMA) comprising:
> a subscriber measuring channel and interference information for a plurality of subcarriers based on pilot symbols received from a base station;
> the subscriber selecting a set of candidate subcarriers;
> the subscriber providing feedback information on the set of candidate subcarriers to the base station, wherein providing feedback information comprises arbitrarily ordering the set of candidate of [*sic*] subcarriers as clusters of subcarriers, and further wherein the feedback information includes an *index indication of a candidate cluster with its SINR value*; and
> the subscriber receiving an indication of subcarriers of the set of subcarriers selected by the base station for use by the subscriber.

The specification discloses:

> In one embodiment, for the downlink, *the feedback contains both the indices of selected clusters and their SINR*. An exemplary format for arbitrary cluster feedback is shown in FIG. 5. Referring to FIG. 5, the subscriber provides a *cluster index (ID) to indicate the cluster and its associated SINR value*. For example, in the feedback, the subscriber provides cluster ID1 (501) and the SINR

> for the cluster, SINR1 (502), cluster ID2 (503) and the SINR for the cluster, SINR2 (504), and cluster ID3 (505), and the SINR for the cluster, SINR3 (506), etc. The SINR for the cluster may be created using an average of the SINRs of the subcarriers. Thus, multiple arbitrary clusters can be selected as the candidates. As discussed above, the selected clusters can also be ordered in the feedback to indicate priority. In one embodiment, the subscriber may form a priority list of clusters and sends back the SINR information in a descending order of priority.

'748 patent, 10:49-64 (emphasis added). Figure 5 of the '748 patent is reproduced here:

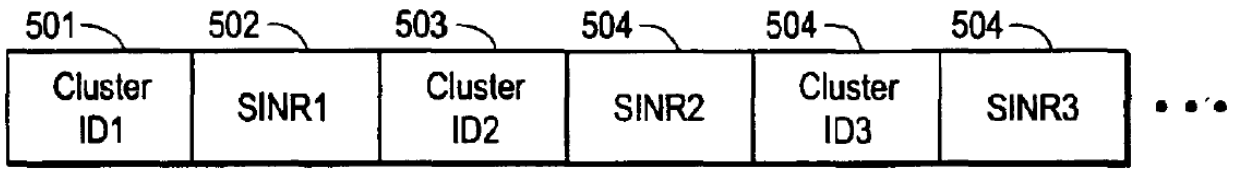

FIG. 5

On one hand, "[e]ven when the specification describes only a single embodiment, the claims of the patent will not be read restrictively unless the patentee has demonstrated a clear intention to limit the claim scope using 'words or expressions of manifest exclusion or restriction.'" *Liebel-Flarsheim Co. v. Medrad, Inc.*, 358 F.3d 898, 906 (Fed. Cir. 2004) (quoting *Teleflex, Inc. v. Ficosa N. Am. Corp.*, 299 F.3d 1313, 1327 (Fed. Cir. 2002)); *see Electro Med Sys., S.A. v. Cooper Life Scis., Inc.*, 34 F.3d 1048, 1054 (Fed. Cir. 1994) ("[P]articular embodiments appearing in a specification will not be read into the claims when the claim language is broader than such embodiments."); *see also MBO Labs. Inc. v. Becton, Dickinson & Co.*, 474 F.3d 1323, 1333 (Fed. Cir. 2007) ("[P]atent coverage is not necessarily limited to inventions that look like the ones in the figures. To hold otherwise would be to import limitations [i]nto the claim[s] from the specification, which is fraught with danger.") (citations and internal quotation marks omitted).

On the other hand, "claims must be read in view of the specification, of which they are a part." *Phillips*, 415 F.3d at 1315 (citation and internal quotation marks omitted).

Here, Defendants' proposal of an "identifier (ID)" is consistent with disclosure of "a cluster *index (ID)* to indicate the cluster and its associated SINR value." '748 patent, 10:52-54 (emphasis added). Although the word "identifier" does not appear in the specification, "identifier" is associated with the abbreviation "ID" in common parlance and will be more readily understandable to a finder of fact than the cryptic, amorphous phrase "index indication." Finally, some persuasive weight is also given to Judge Grewal's above-noted construction.

The Court therefore hereby construes **"index indication of a candidate cluster with it[s] SINR value"** to mean **"identifier (ID) of a chosen candidate cluster of subcarriers accompanied by its SINR value."**

D. "SINR value"

Plaintiff's Proposed Construction	**Defendants' Proposed Construction**
"value indicative of a Signal to Interference plus Noise Ratio"	"Signal-to-Interference-plus-Noise Ratio measurement"

Dkt. No. 121, Ex. A at 5; Dkt. No. 168 at 13. This disputed term appears in claims 6 and 19 of the '748 patent.

Judge Grewal construed this disputed term to mean "calculation based on the Signal-to-Interference-plus-Noise Ratios of the cluster's subcarriers." Dkt. No. 168, Ex. C at 3.

(1) The Parties' Positions

Plaintiff argues that Defendants' proposal "improperly imports a limitation from the specification into the claims" because "[t]he plain and ordinary meaning of 'value' may include 'measurement,' but it is broader." Dkt. No. 168 at 13. Plaintiff submits that "[t]he patent

specification is replete with different examples of SINR values that are not SINR measurements per se – rather they are calculations based on SINR" or even an "index" to the SINR level. *Id.* at 13-14 (citing '748 patent, 7:29-11:2 ("Pilot Symbols and SINR Measurement"), 7:43-46, 7:62, 8:10-11, 8:48-50, 9:6-9, 9:31-37, 9:49-54, 10:42-43 & 10:65-67).

Defendants respond that Judge Grewal *sua sponte* construed "SINR value" in a manner consistent with Defendants' proposal here. Dkt. No. 170 at 16. Defendants argue that "(1) the claims state that SINR is 'measure[d]' by subscribers, and (2) the claims use a different term, 'SINR information,' to encompass additional information that is indicative of SINR." *Id.* at 17. Defendants submit that "estimating" SINR, for example, is claimed in a different patent held by Plaintiff, namely United States Patent No. 7,072,315. *Id.* Defendants also argue that Plaintiff's position

> is like arguing that a car's miles per gallon (MPG) value is not a "measurement." It is a measurement, even if it is an average. As used in the specification, the "SINR value" of a cluster refers to the "SINR measurement" of the cluster, including where this is an average of the SINR measurements of each subcarrier in the cluster.

Id. at 18 (citing '748 patent, 10:52-59).

Plaintiff replies that the term "SINR value" should not be limited by the manner in which the terms "SINR" and "SINR measurement" are used in other claims. Dkt. No. 175 at 7. Plaintiff also submits that Judge Grewal reached a substantially different construction than Defendants here propose. *Id.*; *see* Dkt. No. 168, Ex. C at 3.

(2) Analysis

Claim 6 of the '748 patent is representative and recites (emphasis added):

> 6. A method for subcarrier selection for a system employing orthogonal frequency division multiple access (OFDMA) comprising:
> a subscriber measuring channel and interference information for a plurality of subcarriers based on pilot symbols received from a base station;

> the subscriber selecting a set of candidate subcarriers;
> the subscriber providing feedback information on the set of candidate subcarriers to the base station, wherein providing feedback information comprises arbitrarily ordering the set of candidate of [*sic*] subcarriers as clusters of subcarriers, and further wherein the feedback information includes an *index indication of a candidate cluster with its SINR value*; and
> the subscriber receiving an indication of subcarriers of the set of subcarriers selected by the base station for use by the subscriber.

The specification discloses:

> Next, each subscriber continuously monitors the reception of the pilot symbols and *measures the SINR* and/or other parameters, including inter-cell interference and intra-cell traffic, of each cluster (processing block 102). . . . For example, *SINR values* higher than 10 dB may indicate good performance.
>
> * * *
>
> In one embodiment, each subscriber *measures the SINR* of each subcarrier cluster and reports these *SINR measurements* to their base station through an access channel. *The SINR value may comprise the average of the SINR values of each of the subcarriers in the cluster.* Alternatively, the *SINR value* for the cluster may be the *worst SINR* among the *SINR values* of the subcarriers in the cluster. *In still another embodiment, a weighted averaging of SINR values of the subcarriers in the cluster is used to generate an SINR value for the cluster.*
>
> * * *
>
> Typically, an index to the SINR level, instead of the SINR itself is sufficient to indicate the appropriate coding/modulation for the cluster. For example, *a 3-bit field can be used for SINR indexing to indicate 8 different rates of adaptive coding/modulation.*

'748 patent, 5:37-47, 5:53-62 & 10:65-11:2 (emphasis added); *see id.*, 10:31-43 & 13:46-48.

Defendants have also cited United States Patent No. 6,904,283 ("the '283 patent"), which is a continuation-in-part of the '748 patent. Claims 101 and 104 of the '283 patent recite "SINR information" and "SINR value," respectively, which suggests that those terms have different meanings. *See CAE Screenplates Inc. v. Heinrich Fiedler GmbH & Co. KG*, 224 F.3d 1308, 1317 (Fed. Cir. 2000) ("In the absence of any evidence to the contrary, we must presume that the use of these different terms in the claims connotes different meanings."); *see also NTP*, 418 F.3d

at 1293 (noting that where the "patents all derive from the same parent application and share many common terms, we must interpret the claims consistently across all asserted patents.")

On one hand, "[e]ven when the specification describes only a single embodiment, the claims of the patent will not be read restrictively unless the patentee has demonstrated a clear intention to limit the claim scope using 'words or expressions of manifest exclusion or restriction.'" *Liebel-Flarsheim*, 358 F.3d at 906 (quoting *Teleflex*, 299 F.3d at 1327).

On the other hand, as Defendants note:

> What *Phillips* now counsels is that in the absence of something in the written description and/or prosecution history to provide explicit or implicit notice to the public—i.e., those of ordinary skill in the art—that the inventor intended a disputed term to cover more than the ordinary and customary meaning revealed by the context of the intrinsic record, it is improper to read the term to encompass a broader definition simply because it may be found in a dictionary, treatise, or other extrinsic source.

Nystrom v. TREX Co., 424 F.3d 1136, 1144-46 (Fed. Cir. 2005) (construing term "board" to mean "wood cut from a log" in light of the patentee's consistent usage of the term; noting that patentee "is not entitled to a claim construction divorced from the context of the written description and prosecution history").

On balance, Plaintiff's proposal of a "value indicative" of the recited ratio is vague and overbroad. For example, a numerical ranking of subcarriers in order of performance (*e.g.*, "#1," "#2," "#3," and so forth) could be viewed as a series of values "indicative" of Signal-to-Interference-plus-Noise Ratios. *See* '748 patent, 3:15-19 ("In case of providing information on only a portion of the subcarriers, a subscriber may provide a list of subcarriers ordered starting with those subcarriers which the subscriber desires to use, usually because their performance is good or better than that of other subcarriers.") & 11:66-12:8 ("Many criteria can be used to choose and order the groups, based on the channel information, the inter-cell interference levels,

and the intra-cell traffic load on each cluster. . . . The subscriber may order the groups based on their number of clusters for which the SINR is higher than a predefined threshold."); *see also id.* at 6:4-7, 7:49-51, 9:29-40 & 10:60-64 (similar). Plaintiff's proposed construction is therefore hereby expressly rejected.

As to the proper construction, the parties agree that the disputed term encompasses a "measurement," and the parties also agree that a "measurement" can be an average. Dkt. No. 135 at 14; Dkt. No. 149 at 17. Defendants' proposal of a "measurement" is therefore appropriate, albeit with the understanding that the scope of the word "measurement" includes calculations based on measured values, for example an average of multiple distinct measurements. With such an understanding, construing "SINR value" as referring to a SINR "measurement" is supported by the specification as quoted above. Some persuasive weight is also given to Judge Grewal's above-cited construction of "SINR value" as meaning "*calculation* based on the Signal-to-Interference-plus-Noise Ratios of the cluster's subcarriers."

The Court therefore hereby construes **"SINR value"** to mean **"Signal-to-Interference-plus-Noise Ratio measurement."**

E. "a system employing orthogonal frequency division multiple access (OFDMA)," "subcarrier allocation for OFDMA," and "OFDMA subcarriers"

"a system employing orthogonal frequency division multiple access (OFDMA)" ('748 patent, claims 6 and 8; '212 patent, claim 1)	
Plaintiff's Proposed Construction	**Defendants' Proposed Construction**
"as to 'OFDMA': orthogonal frequency division multiple access; otherwise, no construction necessary; plain and ordinary meaning"	"a system using orthogonal frequency division multiple access (OFDMA) for downlink and uplink communications"

"subcarrier allocation for OFDMA" ('748 patent, claim 11)	
Plaintiff's Proposed Construction	**Defendants' Proposed Construction**
"as to 'OFDMA': orthogonal frequency division multiple access; otherwise, no construction necessary; plain and ordinary meaning"	"OFDMA subcarrier allocation for downlink and uplink communications"
"OFDMA subcarriers" ('748 patent, claims 11, 19, and 21; '212 patent, claim 18)	
Plaintiff's Proposed Construction	**Defendants' Proposed Construction**
"as to 'OFDMA': orthogonal frequency division multiple access; otherwise, no construction necessary; plain and ordinary meaning"	"OFDMA subcarriers for downlink and uplink communications"

Dkt. No. 121, Ex. A at 6-8; Dkt. No. 168 at 14.

Judge Grewal found that "OFDMA" means "orthogonal frequency division multiple access" and that the other terms have their plain and ordinary meaning. Dkt. No. 168, Ex. C at 3.

(1) The Parties' Positions

Plaintiff argues that based on the language of the relevant claims, OFDMA need not be exclusively employed and need not be employed for both downlink and uplink. Dkt. No. 168 at 15. Plaintiff also argues that "the specification fully supports a natural reading of the claims as pertaining to the allocation of downlink subcarriers." *Id.* at 16.

Defendants respond that although Judge Grewal construed the disputed terms as having their "plain and ordinary meaning," the court did not enter an opinion and therefore did not address whether OFDMA must be employed for both downlink and uplink. Dkt. No. 170 at 25. Defendants also argue that "each claim includes limitations directed to downlink *and* uplink

communications" and that "nothing in the claim language indicates that the claims cover using a non-OFDMA multiple access method for uplink communications." *Id.* at 25-26. Likewise, Defendants submit that "[n]owhere in the specification or file history do the named inventors teach any 'OFDMA' system that uses non-OFDMA multiple access for uplink communications." *Id.* at 27. Finally, Defendants note that "the specification teaches an exemplary base station, depicted in Figure 13, that uses OFDMA for both downlink and uplink communications." *Id.* at 26.

Plaintiff replies by reiterating its opening arguments and by urging that "[t]he claims are clearly agnostic on whether either or both of downlink and uplink are involved." Dkt. No. 175 at 8.

(2) Analysis

On one hand, the specification does not identify different protocols for downlink and uplink communications:

> For downlink channels, each subscriber first measures the channel and interference information for all the subcarriers and then selects multiple subcarriers with good performance (e.g., a high signal-to-interference plus noise ratio (SINR)) and feeds back the information on these candidate subcarriers to the base station.

'748 patent, 3:7-12.

> The SINR as well as the traffic load information on the uplink subcarriers are used for uplink subcarrier allocation. For either direction, the base station makes the final decision of subcarrier allocation for each subscriber.

Id. at 3:50-55.

> Once the basic communication link is established, each subscriber can continue to send the feedback to the base station using a dedicated traffic channel (e.g., one or more predefined uplink access channels).

Id. at 6:29-32.

Feedback Format for Downlink Cluster Allocation

In one embodiment, for the downlink, the feedback contains both the indices of selected clusters and their SINR. An exemplary format for arbitrary cluster feedback is shown in FIG. 5. Referring to FIG. 5, the subscriber provides a cluster index (ID) to indicate the cluster and its associated SINR value. For example, in the feedback, the subscriber provides cluster ID1 (501) and the SINR for the cluster, SINR1 (502), cluster ID2 (503) and the SINR for the cluster, SINR2 (504), and cluster ID3 (505), and the SINR for the cluster, SINR3 (506), etc. The SINR for the cluster may be created using an average of the SINRs of the subcarriers. Thus, multiple arbitrary clusters can be selected as the candidates. As discussed above, the selected clusters can also be ordered in the feedback to indicate priority. In one embodiment, the subscriber may form a priority list of clusters and sends back the SINR information in a descending order of priority.

Typically, an index to the SINR level, instead of the SINR itself is sufficient to indicate the appropriate coding/modulation for the cluster. For example, a 3-bit field can be used for SINR indexing to indicate 8 different rates of adaptive coding/modulation.

Id. at 10:48-11:2.

FIG. 13 is a block diagram of one embodiment of a base station. Referring to FIG. 13, cluster allocation and load scheduling controller 1301 (cluster allocator) collects all the necessary information, including the downlink/uplink SINR of clusters specified for each subscriber (e.g., via SINR/rate indices signals 1313 received from OFDM transceiver 1305) and user data, queue fullness/traffic load (e.g., via user data buffer information 1311 from multi-user data buffer 1302). Using this information, controller 1301 makes the decision on cluster allocation and load scheduling for each user, and stores the decision information in a memory (not shown). Controller 1301 informs the subscribers about the decisions through control signal channels (e.g., control signal/cluster allocation 1312 via OFDM transceiver 1305). Controller 1301 updates the decisions during retraining.

In one embodiment, controller 1301 also performs admission control to user access since it knows the traffic load of the system. This may be performed by controlling user data buffers 1302 using admission control signals 1310.

The packet data of User 1~N are stored in the user data buffers 1302. For downlink, with the control of controller 1301, multiplexer 1303 loads the user data to cluster data buffers (for Cluster 1~M) waiting to be transmitted. For the uplink, multiplexer 1303 sends the data in the cluster buffers to the corresponding user buffers. Cluster buffer 1304 stores the signal to be transmitted through OFDM transceiver 1305 (for downlink) and the signal received from transceiver

> 1305. In one embodiment, each user might occupy multiple clusters and each cluster might be shared by multiple users (in a time-division-multiplexing fashion).

Id. at 11:10-37. Figure 13, reproduced here, illustrates "OFDM Signal" with a bi-directional arrow, indicating both downlink and uplink:

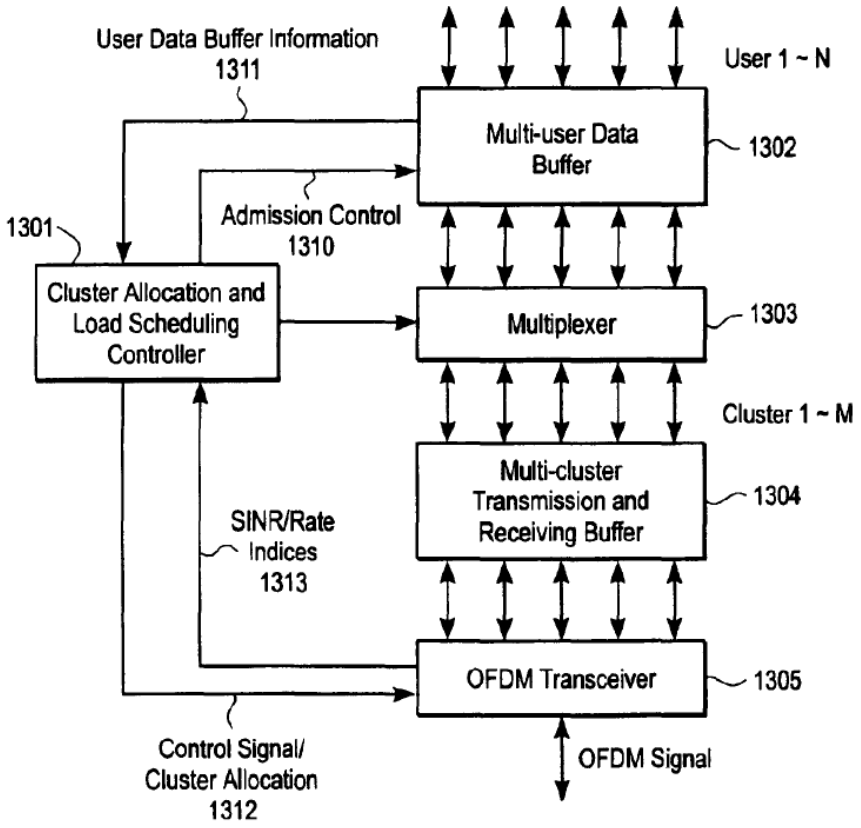

FIG. 13

On the other hand, Claims 6 and 11 of the '748 patent are representative and recite (emphasis added):

> 6. A method for subcarrier selection for *a system employing orthogonal frequency division multiple access (OFDMA)* comprising:
>
> a subscriber measuring channel and interference information for a plurality of subcarriers based on pilot symbols received from a base station;
>
> the subscriber selecting a set of candidate subcarriers;
>
> the subscriber providing feedback information on the set of candidate subcarriers to the base station, wherein providing feedback information comprises arbitrarily ordering the set of candidate of [*sic*] subcarriers as clusters of

> subcarriers, and further wherein the feedback information includes an index indication of a candidate cluster with its SINR value; and
>
> the subscriber receiving an indication of subcarriers of the set of subcarriers selected by the base station for use by the subscriber.
>
> * * *
>
> 11. An apparatus comprising:
>
> a plurality of subscribers in a first cell to generate feedback information indicating clusters of subcarriers desired for use by the plurality of subscribers; and
>
> a first base station in the first cell, in response to receiving inter-cell interference information, coordinates with other cells to make a cluster assignment decision, the first base station performing *subcarrier allocation for OFDMA* to allocate *OFDMA subcarriers* in clusters to the plurality of subscribers based on inter-cell interference avoidance and intra-cell traffic load balancing in response to the feedback information.

Although the specification discloses both downlink and uplink communication, such as quoted above, "each claim does not necessarily cover every feature disclosed in the specification. When the claim addresses only some of the features disclosed in the specification, it is improper to limit the claim to other, unclaimed features." *Ventana Med. Sys., Inc. v. Biogenex Labs., Inc.*, 473 F.3d 1173, 1181 (Fed. Cir. 2006). On balance, the claims require only that OFDMA must be used, not that it must be used for both downlink and uplink communications. Defendants' proposed constructions are therefore hereby expressly rejected.

The parties' dispute having thus been resolved, the disputed terms need not be construed any further. *See U.S. Surgical Corp. v. Ethicon, Inc.*, 103 F.3d 1554, 1568 (Fed. Cir. 1997) ("Claim construction is a matter of resolution of disputed meanings and technical scope, to clarify and when necessary to explain what the patentee covered by the claims, for use in the determination of infringement. It is not an obligatory exercise in redundancy."); *see also O2 Micro*, 521 F.3d at 1362 ("[D]istrict courts are not (and should not be) required to construe every limitation present in a patent's asserted claims."); *Finjan, Inc. v. Secure Computing Corp.*, 626

F.3d 1197, 1207 (Fed. Cir. 2010) ("Unlike *O2 Micro,* where the court failed to resolve the parties' quarrel, the district court rejected Defendants' construction.").

The Court therefore hereby construes **"a system employing orthogonal frequency division multiple access (OFDMA)," "subcarrier allocation for OFDMA,"** and **"OFDMA subcarriers"** to have their **plain and ordinary meaning**.

F. "arbitrarily order[ed/ing]"

Plaintiff's Proposed Construction	**Defendants' Proposed Construction**
"based on or determined by individual preference or convenience"	"order[ed/ing] in a manner not previously defined"

Dkt. No. 121, Ex. A at 8; Dkt. No. 168 at 17. This disputed term appears in claims 6 and 19 of the '748 patent and claims 13 and 28 of the '212 patent.

Judge Grewal construed this disputed term to mean "ordering in a manner not previously defined." Dkt. No. 168, Ex. C at 3.

(1) The Parties' Positions

Plaintiff argues that Defendants' proposal "is not consistent with the plain and ordinary meaning of the term and finds no support in the intrinsic or extrinsic evidence." Dkt. No. 168 at 17.

Defendants respond that the "index indication" recited in the claims in association with arbitrarily ordering "is only necessary where the clusters and their SINR values are ordered in a manner not previously defined (*i.e.,* where the base station would not otherwise know which cluster each SINR value corresponds to)." Dkt. No. 170 at 23 (citing '748 patent, 6:1-8). Defendants explain that "[i]f the order of information in the feedback is known to the base station (*i.e.,* previously defined), no cluster index is needed to indicate which SINR value in the

feedback corresponds to which cluster." *Id.* Defendants further urge that Plaintiff's proposals of "preference" and "convenience" are "ambiguous and not supported by the intrinsic record." *Id.* at 24.

Defendants have also cited extrinsic dictionary definitions of "arbitrary" and "arbitrarily" as meaning: (1) "not fixed by rules, but left to one's judgment or choice; discretionary" (Dkt. No. 170, Ex. 14, *Webster's New World College Dictionary* 70 (3d ed. 1997) ("arbitrary")); (2) "In an arbitrary manner, at will; . . . merely at will, without sufficient reason, capriciously" (*id.*, Ex. 15, *The Oxford English Dictionary* 602 (2d ed. 1998) ("arbitrarily")); and (3) "Depending on individual discretion; specif., determined by a judge rather than by fixed rules, procedures, or law" (*id.*, Ex. 16, *Black's Law Dictionary* 100 (7th ed. 1999)). Plaintiff has argued that these definitions are consistent with Plaintiff's own proposed constructions, but Plaintiff has not otherwise challenged these definitions. Dkt. No. 168 at 17-18.

Plaintiff replies that the disputed term should not be defined "in the negative" and that "[t]o the extent that [Defendants' proposed] construction seeks to exclude situations where there are any constraints on how less than all clusters can be identified, this construction is not consistent with the specification (which teaches a generic approach for identifying any sub-set of clusters in any order), and is furthermore not required by the ordinary meaning of the term arbitrary." Dkt. No. 175 at 9. Finally, Plaintiff argues that "[a]s claim 6 further recites that the subscriber's feedback information includes 'an index indication of a candidate cluster with its SINR value[,]' the claim itself captures the specification's teaching that 'arbitrarily ordering' involves providing a cluster index to identify the clusters." *Id.*

(2) Analysis

Plaintiff's proposal of "preference or convenience" is subjective and is therefore disfavored. *Cf. Datamize*, 417 F.3d at 1350 (affirming grant of summary judgment of indefiniteness because "[i]n the absence of a workable objective standard, 'aesthetically pleasing' does not just include a subjective element, it is completely dependent on a person's subjective opinion").

Defendants' proposal of an order "not previously defined," however, is unclear and potentially confusing as to when, by what, and as to what the order has not been "previously defined."

The specification discloses that the significance of "arbitrarily" ordering is that identification information must accompany the subscriber's feedback regarding subcarrier performance because the order of the feedback information is not known to the base station:

> No cluster index is needed to indicate which SINR value in the feedback corresponds to which cluster as long as the order of information in the feedback is *known to the base station*. In an alternative embodiment, the information in the feedback is ordered according to which clusters have the best performance relative to each other for the subscriber. In such a case, *an index is needed* to indicate to which cluster the accompanying SINR value corresponds.
>
> * * *
>
> The subscriber provides feedback information that includes the results, listing desired clusters in order or not as described herein.
>
> * * *
>
> In one embodiment, for the downlink, the feedback contains both the indices of selected clusters and their SINR. An exemplary format for *arbitrary cluster feedback* is shown in FIG. 5. Referring to FIG. 5, *the subscriber provides a cluster index (ID) to indicate the cluster and its associated SINR value*. For example, in the feedback, the subscriber provides cluster ID1 (501) and the SINR for the cluster, SINR1 (502), cluster ID2 (503) and the SINR for the cluster, SINR2 (504), and cluster ID3 (505), and the SINR for the cluster, SINR3 (506), etc. The SINR for the cluster may be created using an average of the SINRs of

> the subcarriers. Thus, multiple arbitrary clusters can be selected as the candidates. As discussed above, the selected clusters can also be ordered in the feedback to indicate priority. In one embodiment, *the subscriber may form a priority list of clusters and sends back the SINR information in a descending order of priority.*

'748 patent, 6:1-8, 8:39-41 & 10:49-64 (emphasis added); *see id.*, Fig. 5.

Further, Claim 6 of the '748 patent is representative and recites that where information is "arbitrarily ordered," the feedback information includes an "index" (emphasis added):

> 6. A method for subcarrier selection for a system employing orthogonal frequency division multiple access (OFDMA) comprising:
>
> a subscriber measuring channel and interference information for a plurality of subcarriers based on pilot symbols received from a base station;
>
> the subscriber selecting a set of candidate subcarriers;
>
> the subscriber providing feedback information on the set of candidate subcarriers to the base station, wherein providing feedback information comprises *arbitrarily ordering* the set of candidate of [sic] subcarriers as clusters of subcarriers, and further *wherein the feedback information includes an index indication of a candidate cluster with its SINR value*; and
>
> the subscriber receiving an indication of subcarriers of the set of subcarriers selected by the base station for use by the subscriber.

On balance, the best reading of the claims in light of the specification is that "arbitrarily ordering" refers to ordering in a manner not previously known by the base station. *See Phillips*, 415 F.3d at 1313 ("Importantly, the person of ordinary skill in the art is deemed to read the claim term not only in the context of the particular claim in which the disputed term appears, but in the context of the entire patent, including the specification."). To the extent this interpretation diverges from the above-quoted extrinsic dictionary definitions submitted by the parties, such extrinsic evidence does not outweigh the clear context provided by the above-discussed intrinsic evidence. *See TIP Sys., LLC v. Phillips & Brooks/Gladwin, Inc.*, 529 F.3d 1364, 1375 (Fed. Cir. 2008) (noting that "extrinsic evidence need be given little weight in the court's claim construction if it is outweighed by clear intrinsic evidence"); *see also Nystrom*, 424 F.3d at 1144-45 (discussing patentee's citation of broad dictionary definitions and then noting that the

patentee "is not entitled to a claim construction divorced from the context of the written description and prosecution history").

To be clear, although the *mechanism* by which information is "arbitrarily" ordered might be known by the base station (*e.g.*, ordering from highest to lowest SINR value, *see, e.g.*, '748 patent, 6:4-7), the actual *order* is not known by the base station in advance of receiving the information. As a result, additional input is required for the base station to determine the order of "arbitrarily ordered" information.

Finally, because the parties have not presented any dispute regarding the word "order" or the constituent term "order[ed/ing]," the Court includes those terms as part of the construction for the larger term, as Defendants have proposed. *See O2 Micro*, 521 F.3d at 1362.

The Court therefore hereby construes **"arbitrarily order[ed/ing]"** to mean **"order[ed/ing] in an order not known by the base station."**

V. CONCLUSION

The Court hereby orders the claim terms addressed herein construed as indicated. Charts summarizing these constructions are attached as Exhibit A.

The parties are further ordered that they may not refer, directly or indirectly, to each other's claim construction positions in the presence of the jury. Likewise, the parties are ordered to refrain from mentioning any portion of this opinion, other than the actual constructions adopted by the Court, in the presence of the jury. Any reference to claim construction proceedings is limited to informing the jury of the constructions adopted by the Court.

SIGNED this 12th day of March, 2014.

CAROLINE M. CRAVEN
UNITED STATES MAGISTRATE JUDGE

EXHIBIT A

Agreed Claim Term	**Agreed Construction**
"SINR"	"Signal-to-Interference-plus-Noise Ratio"
"pilot symbols"	"symbols, sequences, or signals known to both base station and subscriber"
"clusters of subcarriers"	"at least two logical units of subcarriers"
"selecting"	"choosing"
"intra-cell traffic load balancing"	"balancing cluster usage within a cell of a base station"

Disputed Claim Term	**Court's Construction**
"select[ing] a set of candidate subcarriers" ('748 patent, claims 6, 8, 19 & 21; '212 patent, claims 1 and 18)	**"choos[ing] a set of subcarriers that the subscriber requests for use"**
"subcarriers [of/from] the set of subcarriers selected by the [first] base station" ('748 patent, claims 6, 8, 19 & 21; '212 patent, claims 1, 3 & 18)	**"subcarriers that the base station has chosen from the set of candidate subcarriers selected by the subscriber"**
"index indication of a candidate cluster with it[s] SINR value" ('748 patent, claims 6 & 19)	**"identifier (ID) of a chosen candidate cluster of subcarriers accompanied by its SINR value"**
"SINR value" ('748 patent, claims 6 and 19)	**"Signal-to-Interference-plus-Noise Ratio measurement"**
"a system employing orthogonal frequency division multiple access (OFDMA)" ('748 patent, claims 6 and 8; '212 patent, claim 1)	**Plain and ordinary meaning**
"subcarrier allocation for OFDMA" ('748 patent, claim 11)	**Plain and ordinary meaning**
"OFDMA subcarriers" ('748 patent, claims 11, 19, and 21; '212 patent, claim 18)	**Plain and ordinary meaning**
"arbitrarily ordering" ('748 patent, claims 6 & 19; '212 patent, claims 13 & 28)	**"order[ed/ing] in an order not known by the base station"**